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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,648	07/22/2003	Yuuko Maki	008312-0305076	4759
909	7590	01/23/2006	EXAMINER	
PILLSBURY WINTHROP SHAW PITTMAN, LLP			DOAN, DUC T	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2188	
DATE MAILED: 01/23/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,648

Applicant(s)

MAKI, YUUKO

Examiner

Duc T. Doan

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-14, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-14, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/16/04 2/14/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAIL ACTION

Status of Claims

Response to Amendment

Claims 1-15 were pending in this application. In response to the last Office Action, Claims 1,7,9-10,12-14 were amended, claims 6,15 were cancelled, claims 16-17 were added. As a result, claims 1-5,7-14,16-17 are remain pending in this application.

Claims 1-5,7-14,16-17 rejected.

All rejections and objections not explicitly repeated below are withdrawn.

Applicant's arguments filed 11/17/2005 have been fully considered but they are not persuasive. Therefore, the rejections from the previous office action are respectfully maintained with changes as needed to address the amendments

Claim Objections

Claims 1 and 10 are objected to because of the following informalities:

Claim 1 appears to indicate an interface unit for transferring data to the destination drive. However the amendment for the control unit indicates that the control unit also transferring a write commands "the control unit transferring a write command...". Examiner cannot find any where in the specification that indicate the control unit is capable of **transferring** a write command, the specification page 3 merely repeat the claim language before the amendment,

“control unit configured to, in accordance with the copying operation instructed by the command unit, perform the copying operation while allowing the reproduced data to be transferred to the external device through the interface unit”.

Claim 10 recites similar limitation as recited in claim 1

All dependent claims are objected to as having the same deficiencies as the claims they depend from.

Appropriate correction is required.

Drawing

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Claim 1 appears to indicate an interface unit for transferring data to the destination drive. However, the amendment for the control unit indicates that the control unit also transferring a write commands “the control unit transferring a write command...”. A drawing is required to show and label the control unit, interface unit, interface unit, components inside these units that are being claimed, and data paths for data transferring across these units from the source drive into the destination drive.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5,7-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis et al (US 5954806) and further in view of Tamura (US Pub 2002/0199073); (Evidentiary reference: Sherritt et al (US 6697895)).

As for claim 1, Ellis describes a disk drive comprising: a head configured to read recorded data from a disk medium; a read channel configured to reproduce data from a read signal which is output from the head (Ellis's Fig 3: #391, #392); a command unit configured to instruct a copying operation for allowing the data which is reproduced by the read channel to be transferred to an external device (Ellis's Fig 3: #DMA engine provides commands such as read/write and location of data to the disk controller #364 allowing data from its read channel Fig 3: #391 to be transferred to other devices attached to SICS bus #350; Examiner notes that specification page 3 merely repeat the claim's language for "command unit"); an interface unit configured to effect a data transfer relative to the external device (Ellis's Fig 3: #SCSI Interface); Ellis does not describe the claim's detail of copying operation. However, Tamura describes a control unit configured to, in accordance with a copying operation instructed by the command unit, perform the copying operation, the control unit transferring a write command for allowing the reproduced data to be written into a recording medium in the copying destination drive and the reproduced data to the copying destination drive through the interface unit (Tamura's Fig 2; Fig 7; page 1, paragraph 8 describes The disk drive received a request for copy operation, and the copy manager of the disk drive with all necessary circuits enable the disk drive performing a complete copy operation as shown in FIG 2: #230, including generating a sequence of write

commands for the copying operations (Fig 6: #532 write command transfer data from source to destination drives), these write commands including information provides in segment descriptors Fig 6: #542 are transferred to the destination drives (Tamura's page 3 paragraph 34). Since these steps such as generated write commands, using these commands to read data in source drives and transferring to a destination drive are executed in a sequent manner (Tamura's Fig 6, page 3 paragraph 34), obviously the copy manager must provide the circuits to control the execution of these steps (circuits corresponding to the claim's control unit). It would have been obvious to one of ordinary skill in the art at the time of invention to include the back-up method as suggested by Tamura in Ellis's system to decentralizing the back up of a storage system (Tamura's page 1 paragraph 7).

As for claim 2, Ellis describes wherein the command unit includes a register configured to hold copying operation instructing information (Ellis's Figure 4: #460 Register file; Ellis describes these registers are used to hold any information for firmware to direct instructions to the protocol engine; column 4, lines 40-56).

As for claim 3, Ellis describes wherein the command unit includes a register configured to hold copying operation instructing information (Ellis's column 4, lines 40-56) and an input device configured to input the information (Ellis's Fig 4: #430 buffer, column 4, lines 35-40).

As for claim 4, Ellis does not describe the claim's detail of data operations. However, Tamura describes wherein the control unit performs a normal read operation for reading data from the disk medium or a normal write operation for writing data onto the disk medium (and, when the copying operation is instructed by the command unit, performs the copying operation in preference to the normal read operation or write operation (Tamura describes in order to

initiating a copy operation, the host sends a E-copy command to a copy manager on a disk system; Tamura's page 1, paragraph 8, lines 4-7).

As for claim 5, the claim rejected based on the same rationale as in the rejection of claim 2. The claim further recites referring to the register at a predetermined timing; the control unit performs the copying operation in accordance with the information set by the register. It has been known in the art that an i/o operation using protocol such as SCSI containing many phases. For example, during a link phase, an initiator and a target attempt to establish a link. During a command transfer phase, a command is sent from the initiator to the target. The initiator must allow a predetermined timing for the target to response in each phase. At the end of the timing window, obviously, the initiator would check for the operation's status (which may be kept in a register) to decide whether to continue or abort the operation. This teaching is evident in Sherritt et al (US 6697895, column 12, lines 16-25), which is introduced here as an evidentiary reference.

As for claim 7, the claim recites wherein, before performing the copying operation, the control unit makes a data transmit request for copying destination drive via the interface unit and performs the copying operation upon receipt of a response to the transmit request which comes from the copying destination drive. The claim is rejected based on the same rationale as in the rejection of claim 1. Tamura describes in page 3, paragraph 34, lines 26-40 that the initiator sends a command (corresponding to the claim's data transmit request), back up device responses with FCP XFER READY, the disk system proceeds with data transfer.

As for claim 8, the claim recite wherein the interface unit includes a register configured to hold the copying operation instructing information and the register holds the information input

from an input unit in the command unit and is accessed from the control unit. The claim rejected based on the same rationale as in the rejection of claim 2.

As for claim 9, the claim rejected based on the same rationale as in the rejection of claim 1. Tamura further describes wherein, in a copying source disk drive connected to an external interface unit of a host system (Tamura's Fig 3: #222 target port) and connected via an internal interface signal line of the host system to the copying destination disk drive (Tamura's Fig 2: #230 signal to the backup device), the interface unit is connected to the external interface unit in accordance with a copying operation by the control unit to transmit the reproduced data to the copying destination drive (Tamura's page 2, paragraph 29).

As for claim 10, the claim rejected based on the same rationale as in the rejection of claim 1.

Claim 11 rejected based on the same rationale as in the rejection of claim 2.

Claim 12 rejected based on the same rationale as in the rejection of claim 5.

Claim 13 rejected based on the same rationale as in the rejection of claim 6.

Claim 14 rejected based on the same rationale as in the rejection of claim 7.

Claims 16-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis et al (US 5954806), in view of Tamura (US Pub 2002/0199073) and further in view of Gehr (US 6453395);

As for claim 16, the claim rejected based on the same rationale as in the rejection of claim 1. The claim further recites a switch configured to instruct a copying operation for allowing the data reproduced by the read channel to be transferred to a copying destination drive,

said switch being activated by a user to initiate the copying operation; Tamura's page 1 paragraph 8 describes circuits in a disk system to accept a copy request that initiate the copy operation from externally source. Tamura does not specifically describes the externally switch as recited in the claim. However, Gehr describes a copy button, which activates the copy software that initiates the copy operation (Gehr's Fig 2: #206). It would have been obvious to one of ordinary skill in the art at the time of invention to include copy button and associated software as suggested by Gehr's in Ellis's system to allow the copy operation to be directly initiated by user and thereby providing user with a simple and familiar interface for copying operation (Gehr's column 1 lines 20-30).

Claim 17 rejected based on the same rationale as in claim 16.

Response to Arguments

Applicant's arguments in response to the last office action have been fully considered but they are not persuasive. Examiner respectfully traverses Applicant's arguments for the following reasons:

As to the remarks concerning on pages 6-8 for claim 1.

A) Examiner attached the exhibition, which describes the definition of DMA; it does not describe anything about the DMA engine. Examiner respectfully disagree with the Applicant's characterization of the DMA engine. The DMA engine must generates commands, addresses, data and sending them to appropriate targets. The information contained in the commands obviously instructs the associating operation. The DMA engines further initiates and controlling the data transfer operation until it completes. (see rationale in the rejection of claim 1).

B) Applicant argue about E-Copy command is unnecessary. Specification page 7 and claim 16 clearly indicates an external source (for example switch) is needed to indicate the copy request. Ellis clearly shows the disk system is capable of receiving the external request to initiate a copy command (for example using an externally command such as E-copy command). Therefore the purpose of the E-copy command is to provide a copy request to the Ellis's disk system in a similar manner as the switch in the instant application.

C) Examiner relies on Sherritt for the teaching of timing periods between phases of a transport protocol such as SCSI. It's has been known in the art that the SCSI protocol are used in various of devices including memory disk tape etc...

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Applicant's amendment filed 8/18/03 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

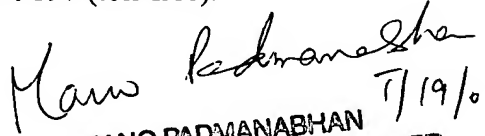
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

When responding to the office action, Applicant is advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc T. Doan whose telephone number is 571-272-4171. The examiner can normally be reached on M-F 8:00 AM 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


7/19/02
MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER